

Attributions of Negative Intent and Responsibility and Anger Arousal of  
Abusive and Nonabusive Males to Perceived Negative Dating Partner Behavior

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Abstract

Research on marital abuse indicates that abusive husbands attribute greater negative intent and responsibility to their partner's behavior and report greater anger arousal during conflictual situations with their partner than do nonabusive husbands (Dutton & Browning, 1988; Holtzworth-Munroe & Hutchinson, 1993). Research also shows that measures of anger arousal (e.g., blood pressure and heart rate) are significantly greater during situations of provocation or threat than neutral or nonprovocative situations (Smith & Allred, 1989). However, research has not attempted to measure abusive and nonabusive males' anger arousal and cognitive attributions to provocative and nonprovocative partner behavior in conflictual situations

Two studies examined attributional responses and one study examined anger arousal in high and low abusive dating males to highly provocative (e.g., girlfriend is flirting with another man) or minimally provocative (e.g., girlfriend wants to talk) partner behavior. A major hypothesis was that abusive males would attribute greater negative intent and responsibility as well as evidence greater blood pressure and heart rate reactivity to their partner's behavior in provocative but not in nonprovocative situations than would nonabusive males.

In Study 1, six hypothetical vignettes (4 provocative and 2 nonprovocative) of dating situations were developed or modified from existing research (Holtzworth-Munroe & Hutchinson, 1993). Provocativeness of the situations was determined through pilot testing which showed that "provocative partner behavior" yielded significantly greater attributions of negative intent and responsibility than did nonprovocative partner behavior. Undergraduate males ( $N = 106$ ) were assessed for their levels of abusive relationship behaviors with the Conflict Tactics Scale (CTS; Straus 1979), for their tendencies to abuse with the Propensity for Abuse Scale (PAS; Dutton, 1995b), and for their expression of anger with the State-Trait Anger Expression Inventory (STAXI; Spielberger, Johnson, Russell, Crane, Jacobs, & Worden, 1985). Participants

then listened to audio-taped situations and completed negative intent and responsibility attribution questionnaires.

Results indicated that high CTS, PAS, and STAXI males attributed greater responsibility and blame to partner behavior in provocative scenes, but not in nonprovocative scenes than did low CTS, PAS, and STAXI males ( $p < .05$ ). Additionally, high CTS, PAS, and STAXI males attributed greater negative intent to partner behavior in both provocative and nonprovocative scenes than did low CTS, PAS, and STAXI males ( $p < .05$ ). There were no interaction effects for attributions of negative intent and responsibility based on dispositional measures and scene provocativeness.

In Study 2, undergraduate males ( $N = 107$ ) were screened for abusive relationship behaviors with the CTS. Screening identified 37 males as High-Abusives ( $n=18$ ) and Low-Abusives ( $n = 19$ ). Participants selected in the screening phase were called back and fitted with a blood-pressure cuff which recorded blood pressure and heart rate before and after each of four scenes (2 provocative and 2 nonprovocative). Following presentation of the scenes, participants completed negative intent and responsibility attribution questionnaires.

Results indicated that both High- and Low-Abusives evidenced significantly greater systolic blood pressure arousal during provocative as compared to nonprovocative scenes ( $p < .05$ ). Similar to Study 1, results showed that High-Abusives attributed greater negative intent and responsibility to partner behavior than did Low-Abusives ( $p < .05$ ). However, blood-pressure and heart rate reactivity of High- and Low-Abusives were not significantly discrepant.

The results of Studies 1 and 2 demonstrated that High-Abusives attributed greater negative intent and responsibility to partner behavior than did Low-Abusives. Study 2 also showed that provocative partner behavior produced greater increases in systolic blood pressure than nonprovocative partner behavior for both High- and Low-Abusives. Overall, these studies provided partial empirical support for the relationship between negative attributions and anger arousal to provocative partner behavior among abusive and nonabusive males. Limitations and future research directions will be discussed.

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## Attributions of Negative Intent and Responsibility and Anger Arousal of Abusive and Nonabusive Males To Perceived Negative Dating Partner Behavior

### Statement of Problem

Due to growing awareness of the effects of intimate male violence, research on male abusive behavior and violence perpetrated against females within their marriage or dating relationships has expanded (See Dutton, 1995a; Feldman & Ridley, 1995; see Miller & Wellford, 1996, for a review). Approximately 1.8 million wives have been physically assaulted by their husbands (Straus & Gelles, 1988). One of every six marriages experiences some form of physical violence by the husband annually, and nearly twice that report at least one physically violent incident over the course of marriage (Straus & Gelles, 1986). In addition, previous research estimates that approximately 66% of males who physically aggress against their wives once also repeat this behavior within one year (see Feldman & Ridley, 1995, for review).

Male intimate abusiveness has also been observed within close dating relationships (e.g., within high school and college populations). In reviewing over 40 studies of dating violence, Sugarman and Hotaling (1989) reported approximately 33% of male college students physically aggressed against their dating partners. More recently, a nationwide sample including over 4,700 college men and women demonstrated that 37% of these men physically abused their dating partner (White & Koss, 1991).

In one of the most comprehensive reviews examining 22 studies of sexual coerciveness from 1957 to 1989, Craig (1990) found that among the 9,077 college women, approximately 19.7% to 96% experienced unwanted touching or offensive sexual behaviors, and 2.2% to 38% reported unwanted intercourse or rape. Finally, Riggs (1993) showed that approximately 30% of women who experience dating aggression reported prolonged emotional disturbances as a result of the incidents.

Given these findings, there has been significant interest in identifying risk factors associated with intimate abusiveness perpetrated by males. Recent research on males' cognitive attributions and anger arousal suggest that abusive behavior may result from attributional processes that mediate the relationship between environmental stimuli and abusive men's arousal of anger.

### Attribution Theory and Intimate Relationship Abusiveness

Early attribution theorists (e.g., Heider, 1958; Kelley 1969) emphasized the importance of attributions in the context of social interactions. In this view, attributions are critical cognitive processes since they determine the “meanings” one ascribes to experiences, thereby “helping him or her understand and predict events” (Camper, Jacobson, Holtzworth-Munroe, & Schmaling, 1988). Attribution theory has since been used to explore abusive males’ cognitive processes and the relationship between their cognitive attributions and their expression of abusive behavior (Holtzworth-Munroe, Jacobson, Fehrenback, & Fruzzetti, 1992; Overholser & Moll, 1990; Shields & Hanneke, 1983). Attribution theory suggests that faulty cognitions (i.e., distorted interpretations) of intimate partner behaviors may increase the likelihood of abusive behaviors. In fact, research suggests that attitudes, cognitions, attributions, and faulty beliefs may influence emotional stress responses, anger arousal and the behavioral responses of intimately violent males (Cohn & Sugarman, 1982; Dutton & Browning, 1988; see Feldman & Ridley, 1995, for a review).

Numerous studies have explored the role of attributions in problematic relationships (Fincham & Beach, 1988; Holtzworth-Munroe et al., 1992; Holtzworth-Munroe & Jacobson, 1985). These efforts have consistently demonstrated a strong association between men’s partner specific aggressive tendencies and their cognitive attributions to specific stimuli. For example, in studying the attributions of distressed and nondistressed couples, Camper et al. (1988) found that the number of self-reported attributions for perceived negative partner behavior was greater for distressed husbands relative to nondistressed husbands. Similar findings have been found for abusive males in marital relationships (Holtzworth-Munroe & Jacobson, 1985).

Research on distressed and nondistressed couples has also demonstrated that level of distress may vary as a function of the various “types” of attributions violent as compared to nonviolent males offer for events. Specifically, abusive males in marital relationships tend to possess a “causal” attributional style whereby perceived negative partner behavior a) causally relates to the partner as opposed to themselves (i.e., external vs. external attribution), b) appears unchanging (i.e., stable vs. unstable attribution), and c) influences many aspects of the relationship (i.e., global vs. specific attribution) (see Fincham & Bradbury, 1992, for a review).

More recently, research has also explored “responsibility” attributions (i.e., attributions of intent, motivation, blame) for partner-specific events. Responsibility attributions constitute the accountability for an event. For example, attributions of intent pertain to whether partner behaviors are perceived as resulting from intentional desires to produce a positive or negative impact upon the male (Camper et al., 1988). Motivation attributions pertain to whether one perceives partner behavior as occurring due to selfish or unselfish reasons. Finally, blame attributions constitute the extent to which one perceives a behavior as the fault of the partner.

Within the domain of domestic violence, research indicates that distressed husbands are significantly more likely to attribute partner behavior as “...more negative in intent, selfishly motivated, and blameworthy...” (Fincham, Beach, & Nelson, 1987, p. 71). In other words, distressed husbands interpreted partner’s behavior as if she purposefully behaved as she did (intent), as if she was thinking solely of herself while engaging in the behavior (selfish motivation), and was at fault for her behaviors (blame).

In examining responsibility attributions, Holtzworth-Munroe and Hutchinson (1993) presented audiotaped situations depicting problematic marital situations to violent/maritally distressed, nonviolent/maritally distressed, and nonviolent/nondistressed husbands. Each participant imagined himself and his wife as the couple in each situation. Additionally, all participants provided attributions of intent, motivation, and blame for their partner’s behavior. Results indicated that violent and maritally nonviolent/distressed males were more likely to attribute negative intentions, selfish motivation, and blame to their wives than nonviolent/nondistressed husbands. Moreover, certain types of situations (i.e., involving issues of jealousy, rejection, and possible public embarrassment) produced significantly more negative attributions from violent/maritally distressed husbands in comparison to nonviolent/distressed and nonviolent/nondistressed husbands. Interestingly, other types of situations (e.g., involving issues of engulfment) did not produce differences in attributions between groups. Thus, it appears that such attributional biases may be situation-specific for producing abuse.

Clearly, such findings demonstrate a relationship between problematic situations and subsequent cognitive and behavioral responses. For instance, provocative situations, such as those involving potential jealousy and rejection, not only increase the likelihood of negative attributions for partner behavior, but also clearly differentiate abusive and nonabusive males in

terms of the attributions each makes about their partner's behavior (Holtzworth-Munroe & Hutchinson, 1993). However, research has not examined the relationship between abusive and nonabusive males' attributions for provocative "partner behavior." To differentiate provocative "situations" from provocative "partner behavior," provocative situations portray partner behavior that is neither hostile nor overtly negative (e.g., a man is flirting with your girlfriend). On the other hand, provocative partner behavior is behavior which the partner explicitly attempts to harm, anger, and/or produce an emotional response (e.g., you watch your girlfriend flirt with another man, your girlfriend tells you she won't spend time with you).

Based on these descriptions, provocative partner behavior may be more important to the abusive males' concern for relationship loss than provocative situations. Specifically, research shows that the search for causal explanations (i.e., attributions) for partner behavior increases when stimuli are highly salient or important (Berley & Jacobson, 1984). Thus, provocative partner behavior may increase negative attributions because the behavior is overtly hostile toward the male and threatening to the relationship. Although attributions are seen as an important factor leading to intimate abusiveness, attribution theory postulates that faulty cognitions are not causally related to the occurrence of intimate abuse; rather, abuse is a response to intense anger arousal mediated by faulty attributions (see Feldman & Ridley, 1995, for a review).

#### Anger Arousal

Anger "refers to an unpleasant emotion ranging in intensity from irritation to rage, usually in response to perceived mistreatment or provocation" (Smith, 1992, p. 139). Of particular interest to the present investigation was the relationship between abusive behavior and anger arousal (i.e., blood pressure and heart rate reactivity) to provocative partner behavior. However, few researchers have explored intimate abuse and anger arousal. One exception is the finding that the experience and expression of anger is greater among males who use physical aggression in their relationships as compared to controls (Dutton & Browning, 1988; Maiuro, Cahn, Vitaliano, Wagner, & Zegree 1988). Specifically, Dutton and Browning (1988) found that abusive males reported significantly greater self-reported anger arousal as compared to nonabusive males in a task involving partner abandonment. While this finding provides some insight into the relationship between anger arousal and abuse, evidence of anger arousal through

self-report is susceptible to both subject and experimenter biases, confounding research results. Thus, this area of research lacks evidence of quantifiable and verifiable anger arousal among abusive men to provocative partner behavior.

Research has not examined the relationship between abuse and anger arousal; however, research has investigated the relationship between challenging and provocative stimuli and arousal. Weidner, Friend, Ficarrotto, and Mendall (1989) investigated cardiovascular reactivity of high and low angry/hostile men and women as they attempted to complete an unsolvable anagram task. Results showed that both systolic blood pressure (SBP) and diastolic blood pressure (DBP) were significantly increased for high hostile participants, regardless of gender. The findings suggested the unsolvable nature of the task coupled with the fact that participants were told that the task was “fairly easy,” indicated that the misleading nature of the task possibly produced concerns of suspiciousness and mistrust, especially in high hostiles (Weidner et al., 1989).

Thus, previous findings suggest that angry/hostile males become more aroused in situations involving suspiciousness and threat to their ability. More specifically, diverse situational components may elicit anger arousal in angry men. Smith and colleagues (Smith & Allred, 1989; Smith & Brown, 1991) examined situations in which men were placed in a problem-solving task, either with another male who would take an opposite position, or with his wife in a situation involving incentives to exert control over her. In these studies, hostile males as compared to nonhostile males showed greater SBP and DBP increases during male opposed discussions and greater HR and SBP increases during wife-control situations. Clearly, this suggests that angry as compared to non-angry males evidence significantly greater anger arousal to interpersonal stressors.

Overall, these data show that angry males as compared to nonangry males evidence greater anger arousal, as measured by blood pressure and heart rate reactivity, especially in threatening and provocative situations (e.g., male opposed discussions). Since provocative stimuli produces arousal in angry individuals, and since research shows that assaultive men in comparison to nonassaultive men experience greater levels of angry affect (e.g., Maiuro et al, 1988), a relationship may exist between males who abuse and their measurable anger arousal.

#### Rationale

Feldman and Ridley's (1995) review indicates that abuse results from the mediating effects of attributions on the relationship between environmental stimuli and the arousal of anger. However, the mediating effects of attributions on anger arousal between abusive and nonabusive males are not clear, and research has not explored this relationship.

Research shows that abusive males report greater anger arousal to problematic situations involving their partners than do nonabusive males (Dutton & Browning, 1988). Research also suggests that threatening and provocative stimuli produce increased blood-pressure and heart rate arousal (Smith & Brown, 1991). Therefore, exploring abusive males' measurable anger arousal seems a critical first step in understanding the role, if any, that anger arousal contributes to the sequence of events leading to abusive behavior.

In regard to attributions and abuse, Holtzworth-Munroe and colleagues (1985, 1993) have provided support for a relationship between negative attributions and abusive behavior. However, this study is limited in that it examined attributional responses to provocative situations as opposed to provocative partner behavior. While results indicated that abusive males evidenced significantly greater negative attributions in relation to controls, both abusive and nonabusive males' attributions were markedly below ratings suggestive of provocative partner "behavior." Since abusive men as compared to nonabusive men report greater anger arousal in provocative situations, it seems important to assess whether provocative partner behavior as compared to nonprovocative partner behavior will increase abusive males' negative attributions for partner behavior and anger arousal as compared to nonabusive males.

### Hypotheses

Two studies examined attributional responses and one study examined anger arousal among high and low abusive and angry dating males to situations in which partner behavior was minimally provocative (e.g., girlfriend wants to talk) or highly provocative (e.g., girlfriend is flirting with another man). The experimental hypotheses were as follows:

Hypothesis 1: High-Abusives relative to Low-Abusives would produce greater negative intent and responsibility attributions for situations involving provocative partner behavior, but not in situations involving nonprovocative partner behavior.

Hypothesis 2: Attributions of negative intent and responsibility would be greater for provocative partner behavior as compared to nonprovocative partner behavior, irrespective of abuse classification.

Hypothesis 3: High-Abusives as compared to Low-Abusives would demonstrate greater anger arousal to provocative partner behavior, but not to nonprovocative partner behavior, as measured by cardiovascular reactivity (i.e., systolic and diastolic blood pressure and heart rate).

Hypothesis 4: Provocative partner behavior would produce greater anger arousal, regardless of group classification, than nonprovocative partner behavior.

## Study 1

### Method

#### Design

This was a 2 (High-Abusives vs. Low-Abusives) X 2 (provocative situations vs. nonprovocative situations) factorial design. There were four experimental conditions: High Abusives/provocative situations, High-Abusives/nonprovocative situations, Low-Abusives/provocative situations, and Low-Abusives/nonprovocative situations.

#### Participants

106 undergraduate college males (Mean Age = 18.99,  $SD = 1.46$ ) were recruited through the Psychology Department subject pool at Virginia Polytechnic Institute and State University. Participation was voluntary, and each participant received course credit for their efforts. Participants included diverse groupings of class level (Freshmen = 56.2%, Sophomore = 23.8%, Junior = 17.1%, and Senior = 2.9%) and religion (Catholic = 35.6%, Protestant = 36.5%, Jewish = 1.0%, and Muslim = 1.0%). The majority of participants were Caucasian (87.7%), single (98.3%), and currently dating (58.5%).

#### Measures

Dispositional Questionnaires. The Conflict Tactics Scale (CTS; Straus, 1979) is a measure of behavioral conflict resolution tactics. The CTS is a 17 item scale designed to measure the extent to which a male partner engaged in verbal, psychological, and/or physical attacks on his current or most recent female partner. The CTS is one of the most frequently employed measures for assessing interpartner violence. Since the CTS is an overt measure of

abusive behavior, and since the purposes of the present studies were to determine the effects of males' levels of abusive relationship behaviors on their attributions and anger arousal to partner behavior, the CTS was used to categorize males as High- and Low-Abusives. The CTS has relatively good reliability (.83 for male-to-female violence; Straus et al., 1980). Responses are divided into three categories of conflict resolution: reasoning (e.g., brought someone in to settle things), verbal abuse (e.g., yelled at your partner), and violence (e.g., pushed, grabbed, or shoved your partner). Responses range from 0 (never) to 4 (more than once a week).

The Propensity for Abuse Scale (PAS; Dutton, 1995b) is a 29 item scale assessing risk for intimate violence. The scale was established by combining items from numerous self-report personality scales that most differentiated high- and low-abusive men. Included in scale development were items related to anger, fearful attachment, paternal rejection, and chronic trauma. The PAS evidenced adequate predictive validity by positively identifying 82.2% of a sample of men as either high- or low-abusive (Dutton, 1995b). The PAS has also been successful in identifying abusiveness in clinical outpatients and blue collar workers (Dutton, 1995a). As a measure of the potential for partner abuse, the PAS was employed to assess the relationship between abuse risk and attributions of negative intent and responsibility.

The State-Trait Anger Expression Inventory (STAXI; Spielberger, Johnson, Russell, Crane, Jacobs, & Worden, 1985) is a 44 item measure assessing general and specific experiences with anger. Responses are divided into three categories: How I Feel Right Now (e.g., I am furious), How I Generally Feel (e.g., I am quick tempered), and When Angry or Furious. (e.g., I control my temper). Responses are further divided into eight subscales: state anger, trait anger, anger out, anger in, anger temperament, anger reaction, anger control, and anger expression. The STAXI was used in the present studies to replicate the historical relationship between abusive behavior and difficulties with anger management (Maiuro et al., 1988).

Attribution Questionnaires. A modified version of the Responsibility Attribution Questionnaire (RAQ) was employed (Fincham & Bradbury, 1992). The RAQ is a 4 item questionnaire used in previous research to assess attributions of responsibility to hypothetical situation vignettes (Fincham & Bradbury, 1992; Holtzworth-Munroe & Hutchinson, 1993). Participants were required to rate on a 6-point scale, the level of agreement or disagreement that

their dating partner behaved with negative intent, acted with selfish motivation, and deserved blame for her behavior.

The Negative Intentions Questionnaire (NIQ) is a 5 item inventory from research assessing the specific responsibility attribution of negative intent to hypothetical situation vignettes (Holtzworth-Munroe & Hutchinson, 1993). Participants rated on a 6-point scale how much they agreed or disagreed that their dating partner had behaved with negative intentions.

Four supplementary questions were developed and employed to better assess the characteristics and provocativeness of the hypothetical intimate situation vignettes. These questions explored feelings of jealousy, rejection, and abandonment in response to partner behavior. Additionally, one question assessed the overall impact or provocativeness of the partner's behavior, with responses ranging from very positive (1) to very negative (13).

Hypothetical Dating Vignettes. The present study categorized intimate situation vignettes as involving provocative or nonprovocative partner behavior in a random sample of male college students (N=116). Five situations from a previous study (Holtzworth-Munroe & Hutchinson, 1993) as well as three situations developed specifically for this study were utilized to adequately address a variety of possible intimate situations in relation to provocative behavior. Pilot testing with undergraduate males revealed that attributions of negative intent and responsibility were greater for provocative situations than nonprovocative situations among abusive males. However, two provocative situations were omitted after pilot testing due to extremely low attribution ratings and lack of significant differences based on abuse history. The remaining situations were further modified to increase the level of female partner provocativeness. The result yielded four provocative and two nonprovocative situations.

Finally, a demographics questionnaire was created for this study. Included in the questionnaire was information such as age, academic level, marital status, family background, and intimate relationship history.

### Procedures

Participants initially received an informed consent form for completion. Participants were told that the present study investigated relationships among college students. Once the study was explained and informed consent obtained, participants listened to audio-taped hypothetical vignettes. Participants were instructed to listen to each vignette and provide

responses on the RAQ, NIQ, and supplementary questions. Participants then received the demographics questionnaire, CTS, PAS, and STAXI for their completion. Seating was prearranged so participants were hindered from observing responses of other participants. Additionally, participants were instructed to avoid conversing with other participants to reduce subject interaction effects. Once completed, packets were collected from the participants and stored in a locked cabinet to ensure anonymity. Participants were then thanked for their cooperation.

## Results

### Descriptive Measures

Bivariate correlations were obtained for participants' scores on the CTS, PAS, and STAXI. Results showed statistically significant, moderately positive correlations among all measures (see Table 1). Prior to performing between-group analyses, median splits were employed to differentiate participants' scores on the CTS, PAS, and STAXI. The result yielded two groups categorized as High and Low for each measure. For example, the group categorized as High (i.e., High PAS, High STAXI) represents participants scoring above the median (e.g., greater anger or abusiveness) for each individual measure. As mentioned earlier, the CTS was used to categorize males as High- and Low-Abusives; therefore, all analyses using the term "Abusives" will refer to males' CTS scores.

To compare groups (i.e., Low- and High-Abusives) on descriptive measure, t-tests were employed to compare scores obtained on the CTS, STAXI, and PAS. Table 2 provides a summary of group means and standard deviations for each measure. High-Abusives showed significantly higher scores on the on the CTS ( $\underline{M} = 32.40$ ,  $\underline{SD} = 4.24$ ) than did Low-Abusives ( $\underline{M} = 24.15$ ,  $\underline{SD} = 1.89$ ),  $t(103) = 12.94$ ,  $p < .001$ . Additionally, High-Abusives demonstrated significantly greater scores on the STAXI ( $\underline{M} = 25.48$ ,  $\underline{SD} = 7.85$ ) than did Low-Abusives ( $\underline{M} = 20.53$ ,  $\underline{SD} = 8.71$ ),  $t(103) = 3.06$ ,  $p < .005$ . Finally, High-Abusives scored significantly greater on the PAS ( $\underline{M} = 49.08$ ,  $\underline{SD} = 10.34$ ) than did Low-Abusives ( $\underline{M} = 42.31$ ,  $\underline{SD} = 10.41$ ),  $t(103) = 3.34$ ,  $p < .005$ .

In relation to demographic variables, results indicated that among participants who were currently in a dating relationship, relationship length was greater for High-Abusives ( $\underline{M} = 3.23$ ,  $\underline{SD} = 1.11$ ) than for Low-Abusives ( $\underline{M} = 2.48$ ,  $\underline{SD} = 1.09$ ),  $t(60) = 2.65$ ,  $p < .05$ . Additionally,

among participants who were not currently in a dating relationship, the length of participants' most recent relationship was significantly longer for High-Abusives ( $M = 3.18$ ,  $SD = 1.07$ ) than for Low-Abusives ( $M = 2.54$ ,  $SD = .81$ ),  $t(41) = 2.22$ ,  $p < .05$ .

#### Attributions of Negative Intent and Responsibility

Averaging participants' items for the RAQ and NIQ to form composite scores measuring responsibility and negative intention attributions yielded high internal consistencies (Cronbach's alphas = .79 and .90, respectively). Additionally, participants' NIQ and RAQ scores were highly correlated ( $r = .69$ ). Therefore, composite scores were used to test statistical between-group differences discussed below. Composite scores could range from 1 to 6, with higher scores indicating that men attributed greater negative intent or responsibility to girlfriend behavior.

MANOVAs were performed to assess differences between "Group" (High vs. Low), the between subjects variable, and "Scene Provocativeness" (Neutral vs. Provocative), the within subject variable, within the repeated measures design. The results yielded no significant interaction effects. However, Univariate  $F$ -tests revealed consistent main effects for both group and scene provocativeness.

Results showed that High-Abusives as compared to Low-Abusives reported greater attributions of responsibility,  $F(1,101) = 6.09$ ,  $p < .05$ , and negative intent,  $F(1,103) = 11.01$ ,  $p < .005$  (see Figure 1). Similar results were obtained for scores on the STAXI, with High STAXI males evidencing greater attributions of responsibility,  $F(1,101) = 6.64$ ,  $p < .05$ , and negative intent,  $F(1,103) = 7.29$ ,  $p < .01$  than Low STAXI males (see Figure 2). The PAS results are mixed, such that High PAS males as compared to Low PAS males reported greater attributions of negative intent,  $F(1,104) = 10.54$ ,  $p < .005$ , but evidenced no differences for attributions of responsibility,  $F(1,102) = 1.10$ ,  $ns$  (see Figure 3).

Table 3 displays mean attribution ratings and  $t$ -tests for High- and Low-Abusives, PAS, and STAXI males based on scene provocativeness. Results showed that High-Abusives as compared to Low-Abusives reported greater attributions of negative intent and responsibility to provocative situations. However, High-Abusives also reported greater attributions of negative intent to nonprovocative partner behavior than did Low-Abusives, but no differences emerged between groups for attributions of responsibility to nonprovocative situations.

In regard to main effects for scene provocativeness, Figure 4 shows that irrespective of group classification, provocative scenes produced significantly greater attributions of responsibility,  $t(1,104) = 13.67, p < .001$ , and negative intent,  $t(1,104) = 8.17, p < .001$ , as compared to neutral scenes.

Additional analyses were performed to assess the effects, if any, of current relationship status on attributions of negative intent and responsibility for partner behavior. Results showed that regardless of present dating status, attributions of negative intent and responsibility were not discrepant for either neutral or provocative situations. Thus, the differences noted above cannot be attributed to current relationship status.

### Discussion

The results obtained in this study partially supported hypothesis 1, which stated that High-Abusives as compared to Low-Abusives would evidence greater attributions of negative intent and responsibility in provocative but not in nonprovocative situations. Indeed, abusive males demonstrated greater negative attributions than nonabusive males to provocative partner behavior. However, an unexpected finding emerged whereby abusive males also evidenced greater attributions of negative intent to nonprovocative situations than did nonabusive males. Thus, abusive males reported greater negative attributions for partner behavior irrespective of the provocativeness of partner behavior than nonabusive males.

One potential explanation for this finding is that abusive males may possess a negative attributional pattern, whereby they are more likely to perceive that their partner is attempting to hurt, anger, or pick a fight with them, in many situations, than nonabusive males. This finding is inconsistent with previous research. Specifically, the nonprovocative situations used in this study were similar to the situations examined by Holtzworth-Munroe and Hutchinson (1993) that illustrated no differences between abusive and nonabusive husbands' attributions for partner behavior (e.g., situations where the partner wants something from the male). This difference may be attributed to variations in participant recruitment between the studies. Holtzworth-Munroe and Hutchinson's (1993) nonviolent/distressed group consisted of husbands who reported no physical abuse history, but who were distressed based on a measure of marital satisfaction. Unfortunately, information related to husbands' less violent forms of abusive relationship behavior (i.e., verbal) was unknown. On the other hand, this study separated abusive and

nonabusive participants based on a unitary measure of abuse behavior. This method seems more appropriate and powerful for examining group differences and may better explain why abusive males attributed greater negative intent to provocative and nonprovocative partner behavior than nonabusive males.

The finding that abusive men attributed greater negative intent to nonprovocative behavior was not replicated when exploring their attributions of responsibility to partner behavior. One possible explanation relates to the history and development of the attribution questionnaires. Specifically, the NIQ was developed to specifically address the attributions determined to be particularly salient to abusive males. On the other hand, the RAQ emerged from research examining marital distress. Thus, it may be that attributions of negative intent are unique in describing abusive males' attributional patterns, whereas attributions of responsibility may better describe nonabusive male's attributional patterns (Holtzworth-Munroe & Hutchinson, 1993).

Hypothesis 2 was supported in this study such that, regardless of abuse history, situations involving provocative partner behavior elicited greater attributions of negative intent and responsibility than did situations involving nonprovocative partner behavior. This finding suggests that partner behavior represents a continuum ranging from relatively nonprovocative or neutral behavior to behavior that is malevolent, provocative, and/or meant to incite anger.

In relation to the dispositional measures employed in this study, results showed that the correlations among the CTS, PAS, and STAXI were moderate. The correlations between the CTS and PAS or between the PAS and STAXI were not expected to be large based on an absence of research exploring these relationships. Previous research has suggested that a high positive correlation should emerge between a measure of abuse (i.e., CTS) and a measure of anger (i.e., STAXI) (e.g., Maiuro et al., 1988). Although the correlation between the CTS and STAXI was moderate, between-group analyses showed that males who scored high on the CTS (i.e., High-Abusives) evidenced greater anger scores, supporting a relationship between abuse and anger. Moreover, the fact that significant results emerged between CTS and anger as well as CTS and attributions of negative intent and responsibility, validates the use of the CTS as a screening device to explore anger arousal to partner behavior among abusive and nonabusive males.

Overall, the present study generally supported the hypothesized relationship between men's level of reported abusiveness and anger and their cognitive attributions for female partner behavior. The remaining task is to demonstrate a relationship between attributions of negative intent and responsibility and anger arousal among abusive and nonabusive males to provocative and nonprovocative partner behavior. This was the primary goal of Study 2.

## Study 2

### Method

#### Design

As in Study 1, this was a 2 (High-Abusives vs. Low-Abusives) X 2 (provocative situations vs. nonprovocative situations) factorial design with four experimental conditions: High-Abusives/provocative situations, High-Abusives/nonprovocative situations, Low-Abusives/provocative situations, and Low-Abusives/nonprovocative situations.

#### Screening Phase

Participants. One hundred seven male undergraduate college students completed the screening phase of the study. All participants were recruited through the Psychology Department subject pool at Virginia Polytechnic Institute and State University. Participation was voluntary, and participants received course credit for their efforts.

Measures. Participants completed an informed consent form and were administered the CTS, PAS, STAXI, Cook-Medley Hostility Scale (HO; Cook & Medley, 1954) and demographics questionnaire as described in Study 1. The HO is a 50 item measure which assessed the relationship between abusiveness and hostility in relation to anger arousal. Research has shown a relationship between hostility and arousal, and the HO scale was included to more thoroughly understand the relationship between abusiveness, hostility, and anger arousal. The HO scale is scored on a true-false basis and includes questions assessing various levels of hostility (e.g., I am not likely to speak to people until they speak to me, I am not easily angered).

The neurological screening form is a 16 item questionnaire designed to identify conditions within the individual which may negatively influence the accuracy of physiological measures. The questionnaire requires participants to identify current or historically relevant conditions, including stroke, alcohol abuse, head trauma, etc., and to provide detailed explanations of reported conditions.

Finally, the handedness or laterality questionnaire was employed to assess lateral preference (Coren, Porac, & Duncan, 1979). This 13-item measure has been behaviorally validated as demonstrating lateral preference for hand, foot, eye, and ear. Scores are assessed by crediting one point for right, subtracting one point for left, and zero points for indicating both preferences.

Procedures. Participants completed an informed consent form, followed by a brief synopsis describing the purpose of the study. Participants were told that the present study investigated relationships among college students. Once explained and informed consent obtained, participants received the aforementioned questionnaires for their completion. Seating was prearranged so participants could not observe responses of other participants.

Participants were instructed to avoid conversing with other participants to avoid subject interaction effects. Questionnaire instructions were orally presented. Once completed, packets were collected from the participants. Participants were then debriefed regarding the initial phase of the study and told that some participants may be contacted to participate in the latter stage of the investigation. Finally, participants were thanked for their cooperation.

### Experimental Phase

Participants. Based on CTS scores collected from the screening phase of the study, 37 participants (Mean age = 19.35; SD = 1.64) who were designated either High- or Low-Abusives were selected for inclusion in the experimental phase. Approximately 40% of the participants were currently involved in a dating relationship. Participants were screened by intimate relationship history as well as neurological impairments and handedness. Specifically, participants who reported no intimate relationships lasting at least three months in duration were excluded from the study. Additionally, participants were excused from the study if they presented with serious neurological impairments or were not right-handed.

Measures. As described previously, the RAQ, NIQ, and affective questionnaire were used to assess attributional and emotional responses to female partner behavior. The RAQ and NIQ have been previously employed in attribution research and have demonstrated adequate discriminative validity within married populations (Fincham & Bradbury, 1992; Holtzworth-Munroe & Hutchinson, 1993).

The hypothetical dating vignettes used were identical to Study 1; however, two of the provocative situations from the previous study were omitted in the present study in order to reduce participant fatigue and to allow for within subjects' comparisons. The result yielded two provocative and two nonprovocative situations. Post hoc analyses of Study 1 identified the two provocative situations included in this study that best differentiated High- and Low-Abusives' attributions of negative intent and responsibility. This procedure increased the probability of finding a relationship between abusive and nonabusive males' attributions and anger arousal to partner behavior.

Procedures. Participants selected from the screening phase of the study were contacted and scheduled for the experimental phase. Experimenters (one female, one male) were blind to group classification. Participants completed an informed consent form. Once completed, participants were briefed regarding their responsibilities for participation.

Participants were escorted into a sound-attenuated laboratory where they were seated in a near supine position and fitted with a blood pressure cuff. For the present study, the Cas Medical Systems oscillometric blood pressure monitor with microphoneless cuff was employed.

Participants' left arm was partially extended, supported, and positioned near the level of the fourth intercostal space with upward facing palmar surface. The cuff was positioned on the upper arm. The cuff sensor was located over the brachial artery (assessed by palpation) approximately 2.5 cm above the antecubital space. Once participants were fitted to the apparatus, the experimenter provided the following instructions:

“WHILE YOU LISTEN TO THE SCENES AND WE’RE MEASURING BLOOD PRESSURE, TRY NOT TO MOVE. TRY TO KEEP YOUR FEET FLAT ON THE FLOOR. KEEP YOUR ARM ON THE ARM-REST OF THE CHAIR AND AVOID TALKING. PLEASE KEEP YOUR EYES OPEN EXCEPT WHEN YOU HEAR THE SCENES. KEEP YOUR EYES CLOSED WHILE YOU HEAR THE SCENE, SO THAT YOU CAN BETTER IMAGINE YOU AND YOUR GIRLFRIEND AS THE PERSONS IN THE SCENE. ADDITIONALLY, AFTER YOU HEAR THE SCENE, KEEP YOUR EYES CLOSED WHILE WE MEASURE YOUR BLOOD PRESSURE AND CONTINUE TO IMAGINE WHAT YOU AND YOUR GIRLFRIEND WOULD

DO NEXT. WE WILL TELL YOU WHEN TO OPEN AND CLOSE YOUR EYES IN CASE YOU ARE NOT SURE. WHEN YOU SPEAK, PLEASE DO NOT TURN YOUR BODY OR HEAD. JUST SPEAK CLEARLY AND WE WILL BE ABLE TO HEAR YOU. ARE THERE ANY QUESTIONS BEFORE WE BEGIN?"

Following these instructions, two SBP, DBP, and HR measures were obtained before and after participants listened to each of four situations, two provocative and two neutral. Each situation was presented via the identically standardized audiotaped recording used in Study 1. Vignettes were counterbalanced between participants to control for order effects and cardiovascular recovery effects. The experimenters were physically present but remained in an adjacent room, except to adjust cuff displacements. The experimenter(s) monitored visually displayed SBP, DBP, and HR readings. Once participants completed testing the blood pressure cuff was removed from participants. Participants were then debriefed regarding the study and thanked for their participation.

## Results

### Descriptive Measures

To assess the relationship between the dispositional questionnaires, bivariate correlations were produced across all measures. Table 4 provides a summary of the correlations. Results showed that all measures evidenced moderate to high positive correlations. To compare groups (i.e., Low- and High-Abusives) on descriptive measures, *t*-tests compared scores obtained on the CTS, HO, STAXI, PAS, and the Handedness Questionnaire. Table 5 provides a summary of group means and standard deviations for each measure.

High-Abusives showed significantly higher scores on the on the CTS ( $M = 33.5$ ,  $SD = 5.68$ ) than Low-Abusives ( $M = 24.74$ ,  $SD = 1.41$ ),  $t(35) = 6.52$ ,  $p < .001$ . Additionally, High-Abusives demonstrated significantly greater scores on the STAXI ( $M = 27.67$ ,  $SD = 7.84$ ) than Low-Abusives ( $M = 17.39$ ,  $SD = 6.63$ ),  $t(35) = 4.25$ ,  $p < .001$ . On the PAS, High-Abusives scored significantly greater ( $M = 45.53$ ,  $SD = 10.96$ ) than Low-Abusives ( $M = 37.71$ ,  $SD = 8.09$ ),  $t(35) = 2.48$ ,  $p < .05$ . High-Abusives obtained marginally greater scores on the HO scale ( $M = 24.89$ ,  $SD = 5.36$ ) than Low-Abusives ( $M = 21.05$ ,  $SD = 6.25$ ),  $t(35) = 2.00$ ,  $p = .053$ . High-Abusives' ( $M = 8.00$ ,  $SD = 4.04$ ) scores on the Handedness Questionnaire were not

significantly discrepant from Low-Abusives ( $M = 9.11$ ,  $SD = 3.78$ ),  $t(35) = .86$ ,  $p = ns$ . Finally, High- and Low-Abusives did not differ on any of the demographic variables.

#### Attribution of Negative Intent and Responsibility

Averaging of participants' items for the RAQ and NIQ to form composite scores measuring responsibility and negative intention attributions replicated the results of Study 1, showing high internal consistencies (Cronbach's alphas = .70 and .90, respectively). Similarly, correlations between participants' NIQ and RAQ scores were demonstrated ( $r = .76$ ). Therefore, composite scores were used to examine differences between groups.

ANOVAs were used to confirm the relationship demonstrated in Study 1, whereby High-Abusives reported higher attributional ratings for female behavior as compared to Low-Abusives. The predicted results were obtained, such that High-Abusives indicated greater attributions of negative intent than did Low-Abusives,  $F(1,35) = 8.57$ ,  $p < .01$ . Additionally, High-Abusives as compared to Low-Abusives reported greater attributions of responsibility,  $F(1,35) = 8.56$ ,  $p < .01$  (see Figure 5). Table 6 displays mean attributional ratings and  $t$ -tests for High- and Low-Abusives based on provocative and nonprovocative situations. Results showed that High-Abusives produced greater attributions of negative intent to both provocative and nonprovocative situations than Low-Abusives. High-Abusives also provided greater attributions of responsibility to nonprovocative situations than did Low-Abusives, and this difference approached significance for provocative situations. Main effect analyses for scene provocativeness demonstrated that provocative situations evidenced significantly greater attributions of negative intent,  $t(1,36) = 6.28$ ,  $p < .001$ , and responsibility,  $t(1,36) = 7.99$ ,  $p < .001$ , as compared to neutral situations (see Figure 6).

Additional analyses were performed to assess the effects of current relationship status on attributions for partner behavior. Results showed that regardless of present dating status, attributions of negative intent and responsibility were not significantly different among neutral or provocative situations. Thus, the differences noted above cannot be attributed to current relationship status.

#### Anger Arousal

Group means and standard deviations of physiological measures (i.e., SBP, DBP, and HR) based on group and situation are shown in Table 7. Independent ANOVAs assessed group

differences on physiological reactivity. All pairwise comparisons were performed using Tukey's Studentized Range Test. For SBP, DBP, and HR, a two-factor, mixed design analysis of variance (ANOVA) was performed with a fixed factor of group (High- and Low-Abusives) and repeated measure of condition (pre- and post-test). Results showed that provocative scenes as compared to neutral scenes produced significantly greater systolic blood pressure reactivity,  $F(1,35) = 5.34, p < .05$ . Thus, both High- and Low-Abusives evidenced greater systolic blood pressure increases to situations involving provocative partner behavior (see Figure 7).

Independent  $F$ -tests for individual situations showed that one of the two provocative situations (situation 2; girlfriend flirts with man at a party) produced significant pre- to post-test differences for systolic blood pressure,  $F(1,35) = 14.43, p < .001$  and for heart rate,  $F(1,35) = 15.22, p < .001$ . Results also revealed significant decreases for this situation from post-test measures to the following pre-test condition for systolic blood pressure,  $F(1,35) = 39.03, p = .0001$ , for diastolic blood pressure,  $F(1,35) = 4.55, p < .05$ , and for heart rate,  $F(1,35) = 26.59, p = .0001$  (see Figures 8 and 9). Results indicate that this particular provocative situation produced significant increases in systolic blood pressure and heart rate compared to pre-test, followed by significant decreases in systolic and diastolic blood pressure, as well as heart rate obtained two-minutes following presentation of the stimulus. These findings were not replicated for the other provocative situation. Multivariate analyses of variance (MANOVAS) revealed no significant interaction effects for SBP, DBP, or HR reactivity based on group and scene provocativeness.

## Discussion

The present studies investigated the relationship between High- and Low-Abusive males' attributions and anger arousal to situations depicting varying levels of provocative partner behavior. The purpose was to determine whether provocative partner behavior as compared to nonprovocative partner behavior differentially influenced cognitive attributions and arousal of anger among High-Abusives and Low-Abusives. The hypotheses generally stated that High-Abusives would evidence greater attributions of negative intent and responsibility as well as greater anger arousal than would Low-Abusives in provocative but not nonprovocative scenes.

Both studies 1 and 2 found partial support for hypothesis 1, in that High-Abusive males evidenced greater attributions of negative intent compared to Low-Abusive males in scenes depicting provocative partner behavior. Contrary to the stated hypothesis, High-Abusives also attributed greater negative intent to nonprovocative situations. Similarly, High-Abusives were more likely to attribute responsibility to their partner's behavior in both provocative and nonprovocative situations than were Low-Abusives. Thus, regardless of the provocativeness of partner behavior, abusive males were more likely to attribute negative intent and responsibility to their female partners than nonabusive males. As mentioned previously, this finding may have emerged due to an attributional pattern among abusive males characterized by generalized negative cognitions about partner behavior. Thus, abusive men may be more likely to misinterpret partner behavior as hostile and hurtful regardless of the provocativeness of the behavior. Moreover, abusive men may be more likely to interpret their partner's actions as being driven by hostile intent.

These studies also found support for hypothesis 2, which stated that irrespective of group classification, provocative partner behavior would elicit greater attributions of negative intent and responsibility than nonprovocative partner behavior. Indeed, situations depicting provocative partner behavior elicited greater attributions of responsibility and negative intent in comparison to situations involving nonprovocative partner behavior. This finding suggests that High- and Low-Abusives interpreted provocative partner behavior as possessing more hostile intent and harm. The aforementioned findings demonstrated that both abusive and nonabusive males attributed greater negative intent and responsibility to provocative partner behavior as compared to nonprovocative behavior, but abusive males were more likely than nonabusive males to attribute negative intent and responsibility to partner behavior, regardless of partner provocativeness.

In regard to anger arousal, no support was found for hypothesis 3, which stated that High-Abusives would produce greater anger arousal to provocative partner behavior than would Low-Abusives. The results of Study 2 revealed no group differences for systolic or diastolic blood pressure or heart rate for provocative or nonprovocative situations, or for any of the sixteen individual blood pressure and heart rate measurements obtained in the study. This finding is inconsistent with the work of Dutton and Browning (1988) who found that violent

males demonstrated greater self-reported anger arousal to situations depicting abandonment than did nonviolent males. One potential explanation for the lack of physiological differences between groups may be related to the intensity of the stimulus used to elicit anger arousal. Specifically, situations were recorded absent of affect and spoken in a monotone in order to assess anger arousal based on scene content rather than scene affect. Diminished affect may have reduced the realism of the scenes and curtailed participants' anger arousal to the situations. Therefore, it may be premature to posit any substantive conclusions regarding the lack of differences between abusive and nonabusive males' anger arousal to provocative and nonprovocative partner behavior.

Finally, partial support was found for hypothesis 4, which stated that provocative partner behavior would produce greater anger arousal than nonprovocative partner behavior, regardless of abuse classification. The results indicated that situations depicting provocative partner behavior produced greater systolic blood pressure reactivity than situations depicting nonprovocative partner behavior. Further analyses revealed that one provocative situation was effective in producing significant systolic blood pressure and heart rate increases from baseline as well as significant decreases in systolic and diastolic blood pressure and heart rate two-minutes following presentation of the situation. This finding suggests that situations depicting provocative partner behavior likely increase males' arousal of anger as compared to situations depicting nonprovocative partner behavior.

Unfortunately, the other provocative situation did not produce similar results. The failure to find significant differences may be related to the order of situation presentation rather than true differences in provocative partner behavior. Despite the semi-counterbalanced presentation of situations, the provocative situation which showed significant pre- to post-test differences was among the first presented, whereas the other provocative situation was among the last presented. Thus, participants may have habituated to the provocative situation presented in the latter stage of the study due to expectations for partner behavior based on exposure to the former provocative situation.

In general, the present studies found support for a relationship between abusive and nonabusive males' cognitive attributions for provocative partner behavior. With regard to anger arousal, results revealed no group differences; however, a reliable finding for one provocative

situation emerged. The lack of significant differences noted above may be partially attributed to the limitations of the present studies. Namely, the use of non-affective speech may explain the lack of significant differences in anger arousal. Increasing stimulus affect may increase the realism and impact of the situation on abusive males interpretations of partner behavior and anger arousal. Future research should address the issue of stimulus provocativeness, especially in relation to the quality of speech used within the stimulus. The results from the present Study indicate that a monotone presentation of provocative behavior is not sufficient in producing consistent anger arousal.

Another limitation of the present studies was its inability to identify a physically violent subgroup within the population. The college males used in these studies predominately reported using verbally abusive conflict strategies in their relationships. Perhaps males who use physical means to solve conflict do so as a result of greater levels of anger arousal mediated by their attributions of negative intent and responsibility to partner behavior. This would support the tenets of attribution theory which posit that abuse is the result of negative attributions producing anger arousal (see Feldman & Ridley, 1995, for review). Future research should examine males who use physically aggressive conflict tactics to better assess the relationship between attributions, anger arousal, and interpartner abuse. However, these studies were effective in differentiating verbally abusive from nonabusive males in their attributions for partner behavior. This is an important finding that demonstrates that less severe forms of violence relate to negative perceptions of partner behavior. This finding is particularly relevant in terms of identifying developmental pathways leading to abuse. It may be that the relationship between verbal abuse and attributions is a precursor to increasingly abusive behavior through the mediating effects of attributions.

Two other variables, sample size and blood pressure variability, may offer additional explanations for the null findings obtained for anger arousal. Small sample size reduced the power needed for between-group differences to emerge. Additionally, the variability in blood pressure and heart rate reactivity was large for both groups, also reducing the power needed to demonstrate significance. To increase the homogeneity of variance, post hoc linear transformations of blood pressure and heart rate recordings were conducted by calculating the square root of each blood pressure and heart rate recording. Results remained unchanged, with

no group differences on any of the sixteen blood pressure and heart rate recordings. Thus, attempts to control for the heterogeneity of variability did not increase the likelihood of finding group differences. Large variability in blood pressure and heart rate reactivity may be unavoidable in research examining reactivity to negative stimuli. However, future research should incorporate larger samples to counter the effects of heterogeneity of variance.

Overall, the present studies provided partial support for attributional model of interpartner abuse. Future research should address the limitations noted above before further examining the relationship between attributions, anger arousal, and abuse. Future research should also attempt to examine the attributional model more completely by exploring the temporal relationship between attributions and anger arousal. Specifically, do attributions precede the arousal of anger or does the arousal of anger produce negative attributions? This question might be answered by artificially inducing arousal (e.g., cold pressor), then presenting provocative situations and obtaining attribution ratings. This would likely increase understanding of the relationship between attributions and anger arousal to provocative partner behavior in relation to the developmental pathways leading to abuse.

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Table 1. Bivariate Correlations for Scores Obtained on the CTS, PAS, and STAXI.

	CTS	STAXI	PAS
CTS	----	.428*	.314*
STAXI		----	.561*

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\*p <.01

Table 2. Means and Standard Deviations for CTS, PAS, and STAXI.

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<u>Questionnaire</u>	<u>Low-Abusives</u>		<u>High-Abusives</u>	
	<u>MEAN</u>	<u>SD</u>	<u>MEAN</u>	<u>SD</u>
CTS	24.15	1.89	32.40	4.24
PAS	42.31	10.41	49.08	10.34
STAXI	20.53	8.71	25.48	7.85

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Table 3. Mean Composite NIQ and RAQ Scores and Standard Deviations Made by High- and Low-Abusives, STAXI, and PAS for Provocative and Nonprovocative Partner Behavior.

<b>NIQ</b>						<b>RAQ</b>						
<b>Low-Abusives</b>			<b>High-Abusive</b>			<b>Low-Abusives</b>			<b>High-Abusives</b>			
Situation	M	SD	M	SD	<i>t</i>	<i>df</i>	M	SD	M	SD	<i>t</i>	<i>df</i>
Neutral	2.60	.72	2.94	.64	2.53*	103	2.93	.62	3.09	.59	1.33	103
Provocative	3.20	.70	3.63	.69	2.98**	103	3.82	.64	4.15	.55	2.85**	103

<b>Low STAXI</b>						<b>High STAXI</b>						
Situation	M	SD	M	SD	<i>t</i>	<i>df</i>	M	SD	M	SD	<i>t</i>	<i>df</i>
Neutral	2.60	.69	2.91	.68	2.28*	103	2.87	.66	3.12	.54	2.12*	103
Provocative	3.24	.80	3.56	.71	2.17*	103	3.84	.62	4.11	.59	2.22*	101

<b>Low PAS</b>						<b>High PAS</b>						
Situation	M	SD	M	SD	<i>t</i>	<i>df</i>	M	SD	M	SD	<i>t</i>	<i>df</i>
Neutral	2.61	.69	2.93	.67	2.44*	104	2.94	.62	3.07	.59	1.19	104
Provocative	3.20	.76	3.61	.72	2.87*	104	3.93	.65	4.03	.58	.78	102

\* $p < .05$ . \*\* $p < .01$ .

Table 4. Bivariate Correlations for Scores Obtained on the CTS, PAS, STAXI, and HO.

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	CTS	STAXI	PAS	HO
CTS	----	.689**	.542**	.395*
STAXI		----	.561*	.601**
PAS			----	.458**

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\*p <.05, \*\*p<.01.

Table 5. Means and Standard Deviations for CTS, PAS, and STAXI.

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<u>Questionnaire</u>	<u>Low-Abusives</u>		<u>High-Abusives</u>	
	<u>MEAN</u>	<u>SD</u>	<u>MEAN</u>	<u>SD</u>
CTS	24.74	1.41	33.50	5.68
HO	21.05	6.25	24.89	5.36
PAS	37.71	8.09	45.53	10.96
STAXI	17.39	6.63	27.67	7.84
<u>Handedness</u>	9.11	4.04	8.00	3.78

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Table 6. Mean attributional ratings and results for High- and Low-Abusives.

<b>NIQ</b>						<b>RAQ</b>						
<b><u>Low-Abusives</u></b>			<b><u>High-Abusives</u></b>			<b><u>Low-Abusives</u></b>			<b><u>High-Abusives</u></b>			
Situation	M	SD	M	SD	t	df	M	SD	M	SD	t	df
Neutral	2.26	.77	2.81	.72	2.26*	35	2.52	.45	2.91	.68	2.10*	35
Provocative	3.17	1.04	3.90	.72	2.46*	35	3.89	.88	4.38	.78	1.79	35

\*p &lt; .05.

Table 7. Group means and SD of physiological measures based on group and situation.

<u>Situation</u>	<u>Condition</u>	<u>Low-Abusives</u>		<u>High-Abusives</u>	
		<u>MEAN</u>	<u>SD</u>	<u>MEAN</u>	<u>SD</u>
1	Pre-Test				
	SBP	115.29	10.22	115.22	9.06
	DBP	65.16	8.14	63.58	7.62
	HR	69.08	11.10	71.56	10.62
	Post-Test				
	SBP	115.50	10.18	114.44	7.33
	DBP	63.97	8.89	63.67	6.56
	HR	70.29	9.65	74.47	10.15
2	Pre-Test				
	SBP	114.82	9.11	114.03	8.74
	DBP	63.53	5.38	64.83	5.94
	HR	70.16	10.69	72.42	10.87
	Post-Test				
	SBP	116.82	10.08	116.39	9.05
	DBP	65.13	7.86	64.28	6.54
	HR	72.84	11.16	74.64	10.66
3	Pre-Test				
	SBP	111.97	9.83	112.58	10.51
	DBP	63.98	8.11	62.03	5.21
	HR	68.40	10.11	72.61	10.65
	Post-Test				
	SBP	113.00	10.80	112.47	9.96
	DBP	63.79	8.13	61.31	5.39
	HR	68.50	9.42	72.83	10.92
4	Pre-Test				
	SBP	111.95	9.37	111.97	8.56
	DBP	64.53	7.68	62.06	5.66
	HR	69.71	10.31	73.44	11.44
	Post-Test				
	SBP	112.45	9.61	113.00	9.02
	DBP	61.76	8.85	62.81	5.81
	HR	69.53	9.32	73.61	10.98

### Figure Captions

Figure 1. Abusive and nonabusive males' attributions of negative intent and responsibility to provocative and nonprovocative situations.

Figure 2. Angry and nonangry males' attributions of negative intent and responsibility to provocative and nonprovocative situations.

Figure 3. Males' propensity for abuse and their attributions of negative intent and responsibility to provocative and nonprovocative situations.

Figure 4. Attributions of negative intent and responsibility to provocative and nonprovocative situations collapsed across subject groups.

Figure 5. Abusive and nonabusive males' attributions of negative intent and responsibility to provocative and nonprovocative situations.

Figure 6. Attributions of negative intent and responsibility to provocative and nonprovocative situations collapsed across subject groups.

Figure 7. Blood pressure and heart rate reactivity to provocative and nonprovocative situations based on pre- to post-test change scores.

Figure 8. Systolic blood pressure reactivity to provocative and nonprovocative situation collapsed across subjects.

Figure 9. Heart rate reactivity to provocative and nonprovocative situations collapsed across subjects.

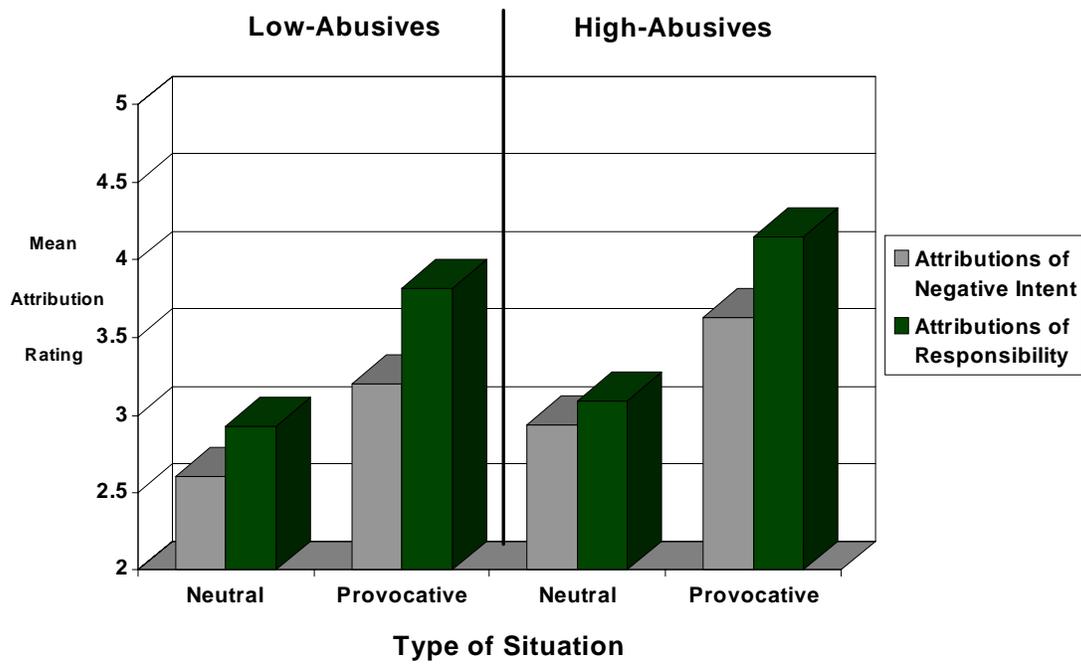


Figure 1. Abusive and Nonabusive Males' Attributions of Negative Intent and Responsibility to Provocative and Nonprovocative Situations.

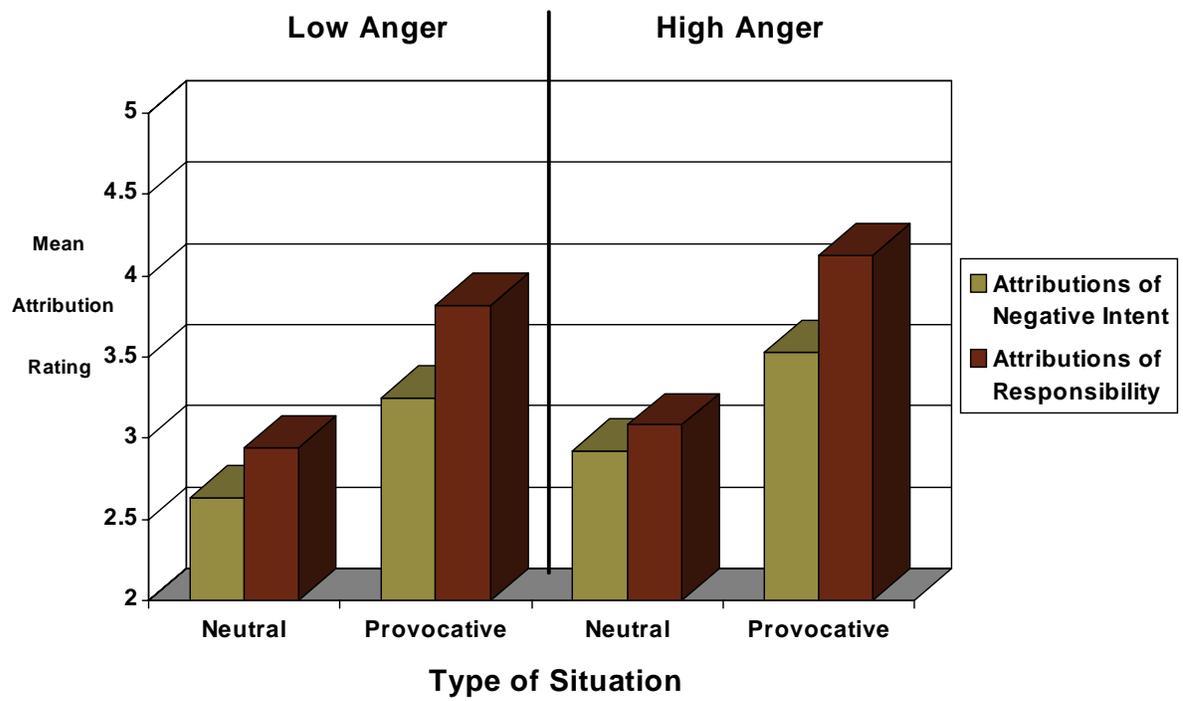


Figure 2. Angry and Nonangry Males' Attributions of Negative Intent and Responsibility to Provocative and Nonprovocative Situations.

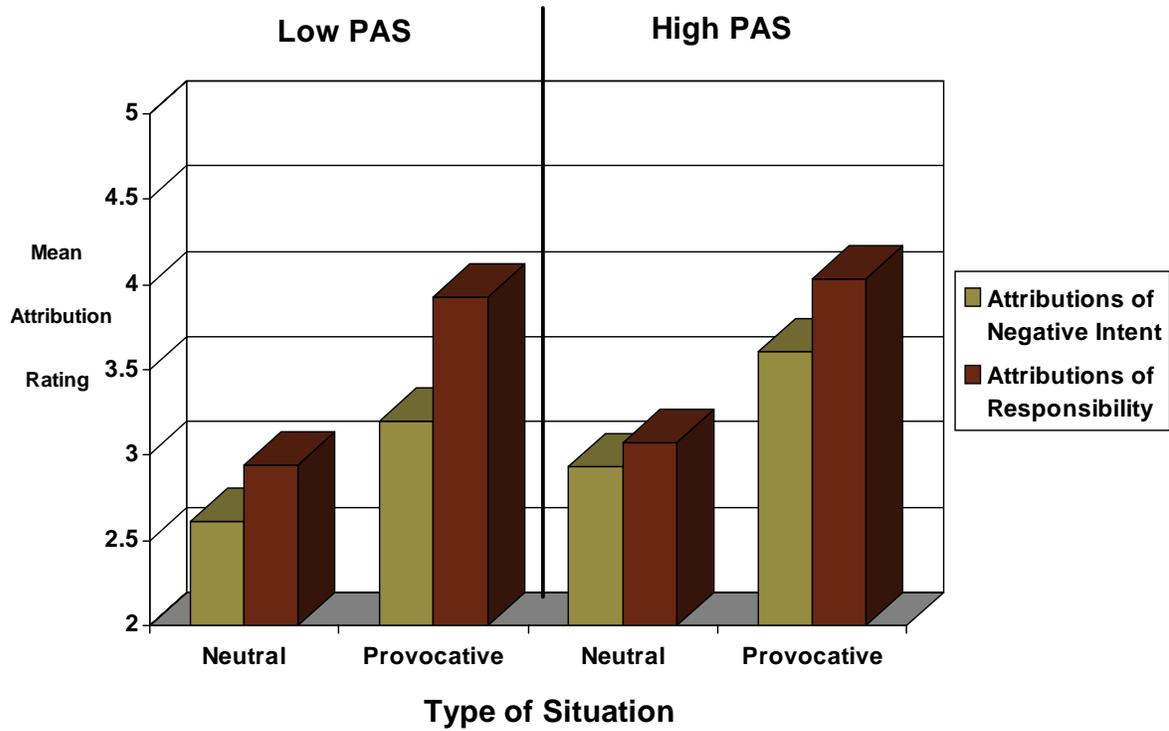


Figure 3. Males' Propensity for Abuse and Their Attributions of Negative Intent and Responsibility to Provocative and Nonprovocative Situations.

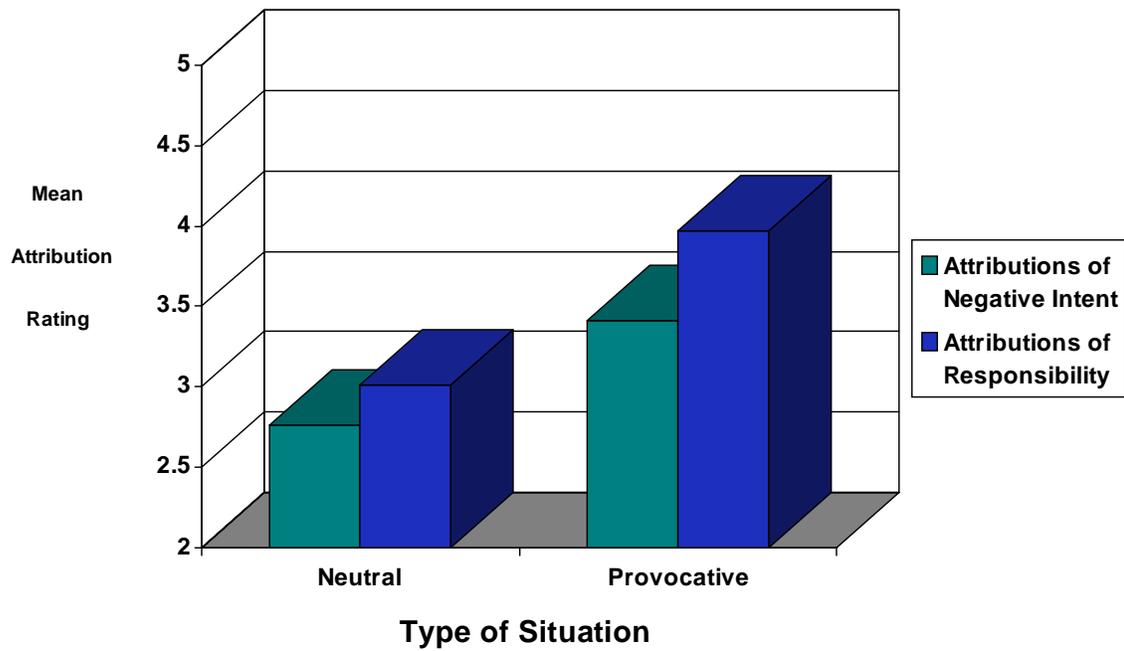


Figure 4. Attributions of Negative Intent and Responsibility to Provocative and Nonprovocative Situations Collapsed Across Subject Groups.

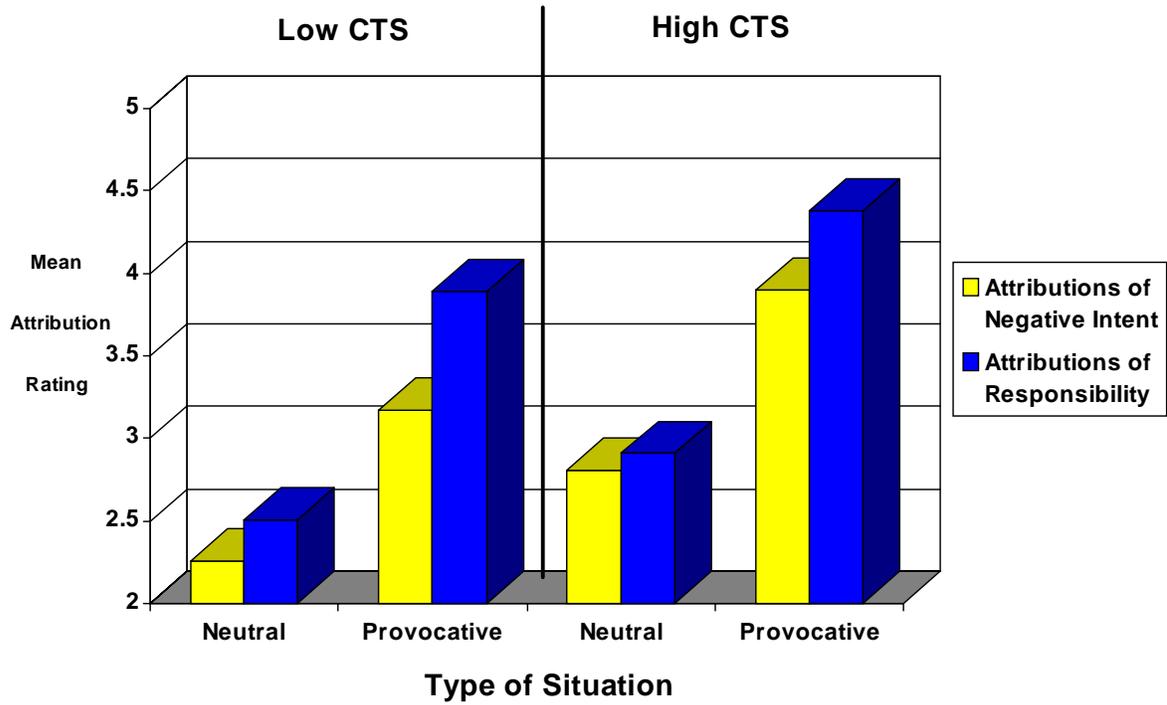


Figure 5. Abusive and Nonabusive Males' Attributions of Negative Intent and Responsibility to Provocative and Nonprovocative Situations.

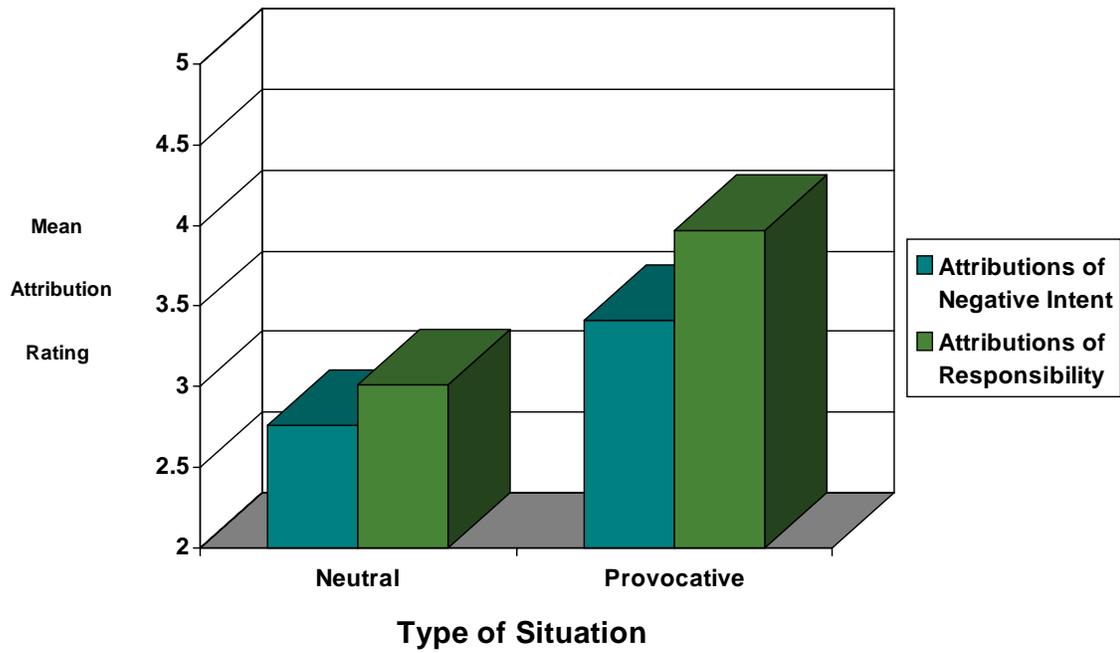


Figure 6. Attributions of Negative Intent and Responsibility to Provocative and Nonprovocative Situations Collapsed Across Subject Groups.

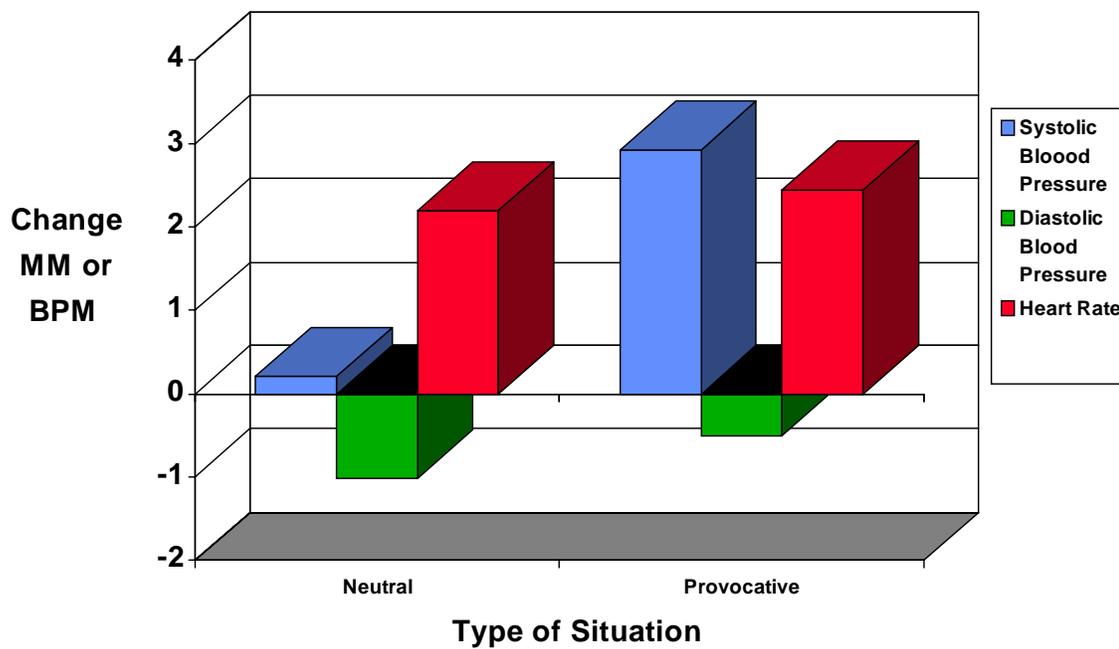
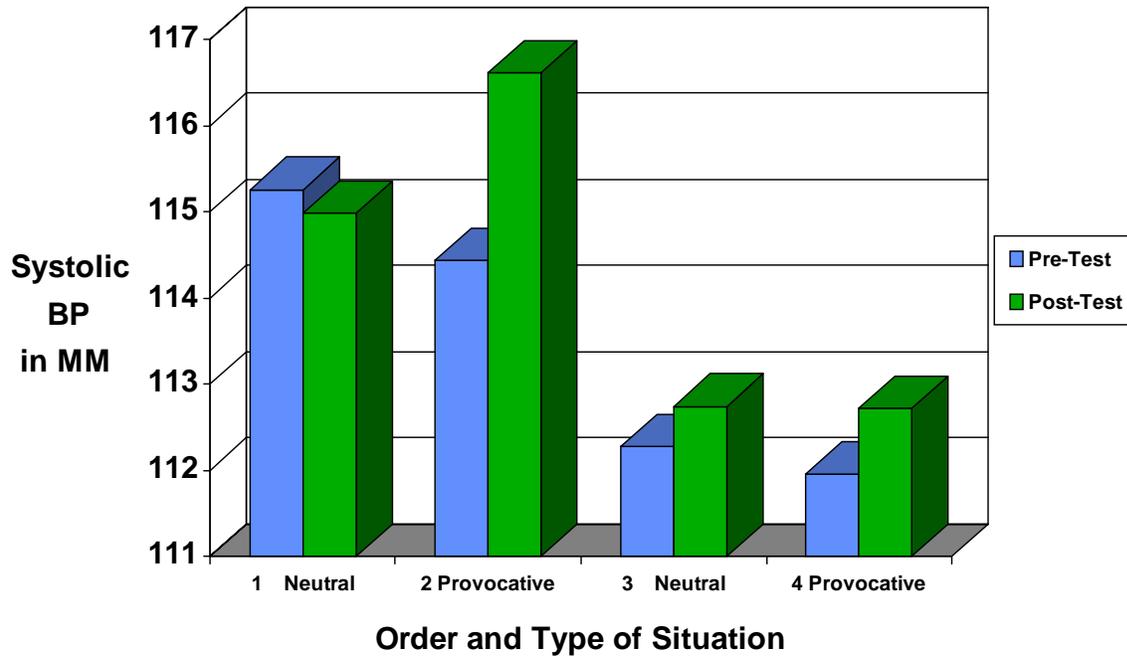


Figure 7. Blood Pressure and Heart Rate Reactivity to Provocative and Nonprovocative Situations Based on Pre- to Post-Test Change Scores.



**Figure 8.** Systolic Blood Pressure Reactivity to Provocative and Nonprovocative Situations Collapsed Across Subjects.

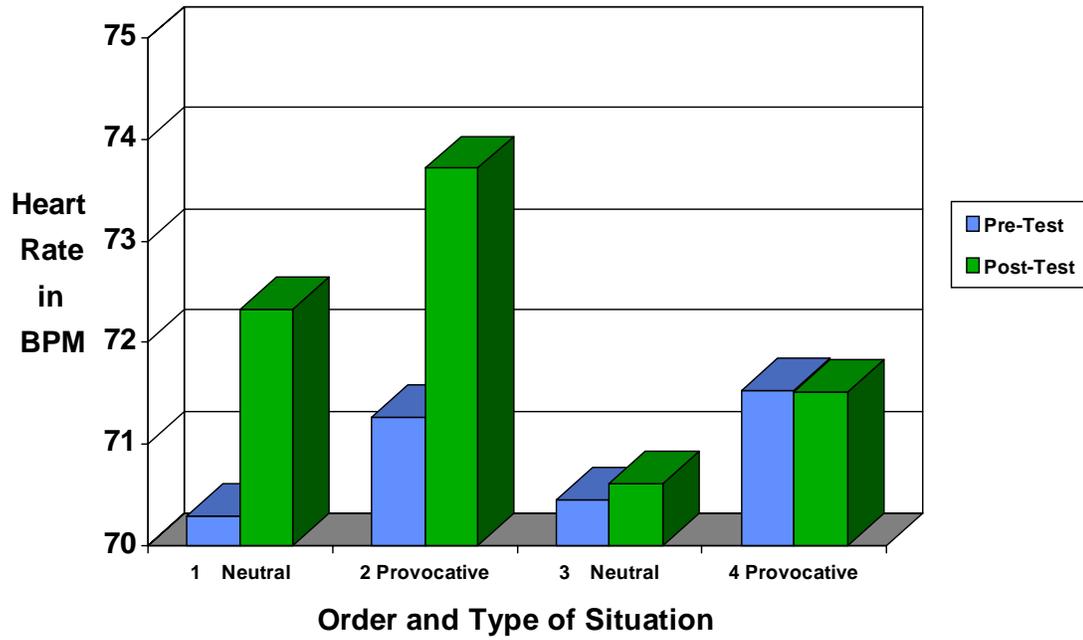


Figure 9. Heart Rate Reactivity to Provocative and Nonprovocative Situations Collapsed Across Subjects.

**CURRICULUM VITA**  
**March 1997**

**Name** **Todd Michael Moore**

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**Date of Birth** December 18, 1970

**Education**

1995-1998 **Masters of Science Candidate, Psychology (Clinical)**  
Virginia Polytechnic Institute and State University  
Degree expected, May, 1998

Thesis Title: Responsibility Attributions and Anger Arousal of Abusive and Nonabusive Males To Perceived Negative Dating Partner Behavior  
Major Advisor: Dr. Richard M. Eisler

June, 1995 **Bachelor of Arts, Clinical Psychology**  
1992-1995 San Jose State University, San Jose, CA  
Senior Honors Thesis Title: Psychological Effects of Raising Children with Autism: A Comparison of Mothers of Singleton and Multiplex Families  
Major Advisor: Dr. Michael Alessandri

**Grants, Honors, and Offices Held**


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1997-Present Guest Reviewer. Journal of Gender, Culture, and Health

1997-Present Graduate Student Representative

1997-Present Panel Member. Graduate Honor System, Virginia Tech

1994-1995 San Jose State University. College of Social Sciences Foundation Research Grant. Senior Honors Thesis.

1995 San Jose State University Center for Autism Research and Educational Services' Scholarship for Excellence in Research.

1994-1995 Who's Who Among Students In American Universities & Colleges

1995 Honors Program in Psychology, San Jose State University

1994-1995 Psi Chi Recruitment Officer, San Jose State University Chapter

1993-Present Psi Chi National Honor Society in Psychology

1994-Present Golden Key National Honors Society

### **Society Membership**

American Psychological Association, Student Affiliate, 1994-Present

American Psychological Society, Student Member, 1994-Present

Western Psychological Association, Student Member, 1994-Present

### **Clinical Training**

- 1997- Neuropsychological Practicum Team - Graduate Clinician  
(250 hours projected)  
Psychological Services Center  
Virginia Tech  
Conducted individual assessments of a variety of neuropsychological difficulties, including head injury, stroke, traumatic brain injury, and other neuropsychological problems. Attended weekly supervision.  
Supervisor: David W. Harrison, Ph.D., L.C.P., DABVN, DABFE
- 1997- Women's Shelter Volunteer  
(approximately 1 hour/week)  
Radford, VA  
Volunteer at the Women's Resource Center shelter for abused women. Answer crisis line, offering empathy and problem-solving to anonymous callers. Manage shelter during evenings, providing support and counseling to women and children.  
Supervisor: Mary Forti, M.S.W.
- 1997 Summer Practicum  
May-August (Approximately 120 hours)  
Psychological Services Center and Child Study Center, Virginia Tech.  
Conducted individual assessments and treatment of a variety of psychological disorders, including depression, anxiety, learning disabilities, attention deficit disorder, and marital discord problems.  
Supervisor: Thomas H. Ollendick, Ph.D.
- 1995-1997 Clinical Practicum, Master's Level  
(Approximately 500 hours)  
Psychological Services Center, Virginia Tech.  
Duties included the assessment and treatment of depression, anxiety, and panic disorder, as well as interpersonal difficulties regarding dating, marriage, previous child abuse, and couples therapy. Attended weekly supervision meetings.  
Supervisors: Richard M. Eisler, Ph.D.; Cynthia P. Lease, Ph.D.;  
Robert S. Stephens, Ph.D.

- 1996  
May-August Summer Externship at the Palo Alto Veteran's Administration, Palo Alto, CA.  
(40 hours/week: 500 hours)  
Conducted individual assessments and treatment of a variety of psychological and interpersonal difficulties, including depression, generalized anxiety disorder, schizophrenia, Gulf War Syndrome, post-traumatic stress syndrome, Alzheimers, and life adjustment problems. Acted as a cotherapist to the outpatient anger control therapy group. Observed weekly grand rounds and individual therapy of patients with HIV and AIDS. Observed weekly interviews of smoking cessation outpatients. Attended and presented weekly case conferences and supervision.  
Supervisor: Gary T. Miles, Ph.D., L.C.P.
- 1995-1996 Group Cotherapist: Anger Control  
(Approximately 80 hours)  
Psychological Services Center, Virginia Tech.  
Conducted individual intake interviews to determine the appropriateness of potential new members, plan and present didactic instruction on controlling anger, facilitate group discussions of various aspects of men's anger, document progress of individual group members, and attend weekly supervision meetings.  
Supervisor: Richard M. Eisler, Ph.D.
- 1994-1995 Behavior Modification Therapist  
(Approximately 60 hours)  
Conducted therapy utilizing behavior modification therapy techniques with twin boys with autism and a child diagnoses developmentally disabled.  
Supervisor: Michael Alessandri, Ph.D.
- 1994-1995 Crisis Hotline Counselor  
(50 hours training; 75 telephone hours)  
Contact Crisis Hotline, San Jose, CA  
Answered a crisis line, offering empathy, problem-solving and suicide prevention to a variety of anonymous callers.  
Supervisor: Mary Pat Lass

### **Research Experience**

- 1/96-Present Principal Investigator. Virginia Tech. "Responsibility attributions and anger arousal of abusive and nonabusive males to perceived negative dating partner behavior."  
Responsibilities include project development, data collection and analysis, and manuscript preparation. Thesis Project.  
Richard M. Eisler, Ph.D., Chair

- 3/98-Present Research Assistant, Virginia Tech. "Accuracy of self-reports II." Research area: Determining individuals' adherence to telephone protocol and accuracy of their report. Duties: Serve as confederate in interviewing process, enter and analyze data, and assist in manuscript preparation.  
Principal Investigator: Jack W. Finney, Ph.D.
- 1/98-Present Research Assistant, Virginia Tech. "Effect of abuse on women's behavioral response to relationship violence." Duties: Data input and analysis, and manuscript preparation.  
Richard M. Eisler, Ph.D., Supervisor
- 1/98-Present Research Assistant, Virginia Tech. "Abused females' cognitive attributions of male and female behavior within intimate conflict situations." Responsibilities include: Data input and analysis and manuscript preparation.  
Richard M. Eisler, Ph.D., Supervisor
- 10/97-Present Co-Principal Investigator, Virginia Tech. "Why battered women stay." Duties: Design and run an original project, data collection, input, and analysis, train and supervise undergraduate assistant (n=1) in data entry and running of subjects, and manuscript preparation.  
Ellie T. Sturgis, Ph.D., Supervisor
- 1997-1998 Research Assistant, Virginia Tech. "Competency of violent males' responses to interpartner conflict." Duties included coding the competency of violent males' written responses to hypothetical conflictual situations involving their intimate partners.  
Richard M. Eisler, Ph.D., Supervisor
- 1996-1997 Research Assistant, Virginia Tech. "Relationship between early attachment style and psychopathology." Duties included: Conducting 2-4 hour interviews with students who endorsed some developing psychopathology and administering Anxiety Disorder Interview Schedule and the Adult Attachment Interview.  
Principal Investigator: Cynthia Lease, Ph.D.
- 1/94-5/95 Co-Principal Investigator, San Jose State University. "Psychological effects of raising children with autism: A comparison of mothers of singleton and multiplex families." Responsibilities include project development, literature review, research design, and data collection, input, and analysis (Senior Honors Thesis).  
Michael Alessandri, Ph.D., Co-Principal Investigator/Supervisor
- 3/94-5/95 Research Assistant, San Jose State University. "Mentorship as a prevention of juvenile delinquency." Responsibilities include coordinating and conducting child, parent, and teacher interviews.  
Principal Investigator: Lisa Keating, M.S.
- 4/94-1/95 Research Assistant, San Jose State University. "Undergraduates' attitudes toward feminism." Responsibilities include literature review and data collection and analysis.  
Principal Investigator: Sheila Bienenfeld, Ph.D.

- 5/94-3/95      Research Assistant. San Jose State University. "Effects of orthographic neighborhood rhyming on lexical access." Chiefly responsible for preparing experimental stimuli. Principal Investigator: Laree Huntsman, Ph.D.
- 2/94-5/94      Research Assistant. San Jose State University. "A direct test of the direct-access model: DUT does not prime TUD." Responsible for coordinating and running subjects, data collection, and data entry. Principal Investigator: Laree Huntsman, Ph.D.
- 4/93-3/94      Research Assistant. San Jose State University. "A cluster analytic study of feminist self-identification and feminist attitudes among undergraduates." Responsibilities included the coordination and administration of a measure on feminist identity development, conducting literature reviews, data collection, and data analysis. Principal Investigator: Sheila Bienenfeld, Ph.D.
- 4/93-3/94      Research Assistant. San Jose State University. "A qualitative study of sources of resistance to feminism." Primary duties included the development and administration of a structured interview, conducting literature reviews, evaluation of data, and data analysis. Principal Investigator: Sheila Bienenfeld, Ph.D.

### **Teaching and Administrative Experience**

- 8/96-Present      Undergraduate Advisor. Virginia Tech. Responsibilities include advising undergraduate psychology students regarding course recommendations, preparation for graduating, and post-baccalaureate careers, as well as assisting faculty members in advising students. Jack W. Finney, Ph.D., Supervisor
- 8/95-5/96      Psychology Laboratory Instructor Virginia Tech. Duties include teaching two introductory psychology laboratory sections during the Fall 1995 and Spring 1996 semesters. Supervisor: Rebecca Colombus, B.A.

### **Publications**

Moore, T. M., Eisler, R. M., & Franchina, J. J., (1998). Attributional responses of abusive males to intimate partner conflict. Manuscript in preparation for submission.

Moore, T. M., Rhatigan, D. L., Cosenzo, K. A., Franchina, J. J., & Eisler, R. M. (1998). Attributional and physiological responses of abusive males to intimate partner conflict. Manuscript in preparation for submission.

Shenal, B. V., Rhodes, R. D., Moore, T. M., Higgins, D. A., & Harrison, D. W. (April, 1998). Quantitative Electroencephalography (QEEG) facilitates neuropsychological syndrome analysis: An alternative to the nomothetic approach. Manuscript under review at *Neuropsychology Review*.

### **Invited Addresses, Paper Presentations, and Posters**

Moore, T. M., & Rhatigan, D. L. (April, 1998). Models of interpartner violence and treatment of domestically violent males. Invited address at the Women's Resource Center, Radford, VA.

Moore, T. M., Rhatigan, D. L., Cosenzo, K. A., Franchina, J. J., & Eisler, R. M. (1998). Attributional and physiological responses of abusive males to intimate partner conflict. Poster submitted to the annual meeting of the Association for the Advancement of Behavior Therapy, Washington, DC.

Moore, T. M., Eisler, R. M., Franchina, J. J., & Burke, R. S. (May, 1998). Attributional responses of abusive males to intimate partner conflict. Poster accepted for presentation at the annual meeting of the American Psychological Society, Washington, DC.

Rhatigan, D. L., Moore, T. M., Chandler, H. K., Franchina, J. J., & Eisler, R. M. (1998). Abused females' cognitive attributions of male and female behavior in intimate conflict situations. Poster submitted to the annual meeting of the Association for the Advancement of Behavior Therapy, Washington DC.

Chandler, H. K., Rhatigan, D. L., Moore, T. M., Franchina, J. J., & Eisler, R. M. (1998). Effect of abuse on women's behavioral response to relationship violence. Poster submitted to the annual meeting of the Association for the Advancement of Behavior Therapy, Washington, DC.

Moore, T. M., Doane, C., Sachs, B. L., Franchina, J. J., & Eisler, R. M. (April, 1998). Abusive and non-abusive college males interpretations and blood pressure reactivity to provocative partner behavior. Poster presented at the annual meeting of the Virginia Collegiate Psychology Conference, Blacksburg, VA.

Shenal, B. V., Rhodes, R. D., Moore, T. M., Higgins, D. A., & Harrison, D. W. (April, 1998). Quantitative Electroencephalography (QEEG) facilitates neuropsychological syndrome analysis: An alternative to the nomothetic approach. Paper presented at the annual meeting of the Virginia Psychological Association, Wintergreen, VA.

Apodaca, X., Faber, B., Jensen, S., Moore, T. M., Prull, S., Raye, B., Tretyl, K., West, C., & Bienenfeld, S. (March, 1994). A cluster analytic study of feminist self identification and feminist attitudes among undergraduates. Paper presented at the annual meeting of the Association for Women in Psychology, Oakland, CA.

Apodaca, X., Faber, B., Jensen, S., Moore, T. M., Prull, S., Raye, B., Tretyl, K., West, C., & Bienenfeld, S. (March, 1994). A qualitative study of sources of resistance to feminism. Paper presented at the annual meeting of the Association for Women in Psychology, Oakland, CA.

Moore, T. M. (April, 1995). Psychological effects of raising children with autism: A comparison of mothers of singleton and multiplex families. Paper presented at the annual meeting of the Western Psychological Association, Los Angeles, CA. and the Spartan Psychological Association Research Colloquium, San Jose, CA.

Huntsman, L. A., Moore, T M., & Skinner, J. (April, 1995). A direct test of the direct access model: DUT does not prime TUD. Poster presented at the annual meeting of the Western Psychological Association, Los Angeles, CA.

### **Personal References**

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